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October 3, 1996

DOCKET FILE COPY ORIGINAL

VIA MESSENGER
Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Re: Ex Parte Presentation
CC Docket 92-105

Dear Mr. Caton:

On behalf of the Intelligent Transportation Society of America ("ITS America") and pursuant to Section 1.1206(a) of the Commission's Rules, this will constitute notice that on October 2, 1996, Paul Najarian, Senior Telecommunications Engineer at ITS America, George Beronio of the Joint Program Office in the Department of Transportation, Eli Scherer, Vice President of Operations at SmartRoute Systems, Robert B. Kelly and Katherine S. Poole of Kelly & Povich, P.C., counsel to ITS America, met with Elizabeth S. Nightingale, Attorney in the Network Services Division, Anne F. Bisese, Electronics Engineer in the Common Carrier Bureau, Kent R. Nilsson, Deputy Chief of Policy in the Network Services Division, and Mary DeLuca, Engineer regarding the possibility of reserving an N11 number nationwide for Advanced Traveler Information Systems. The attached materials were distributed at the meeting.

Two copies of this notice are submitted herewith pursuant to Section 1.1206(a)(1) of the Rules. Should there be any questions on this matter, kindly communicate with this office.

Sincerely,

Katherine S. Poole

cc: Elizabeth S. Nightingale
Anne F. Bisese
Kent R. Nilsson
Mary DeLuca

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Attachment A

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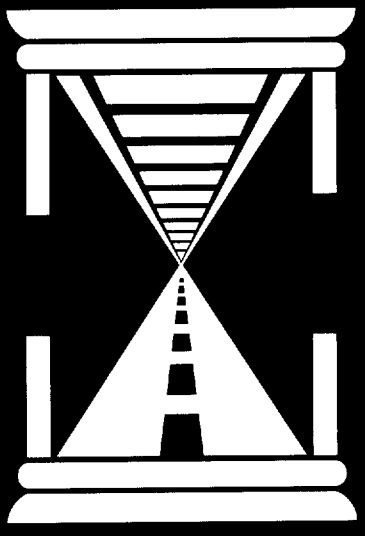

Building The Intelligent Transportation Infrastructure

PRESS KIT

U.S. Department of Transportation

1994-1995

Implementation of the

National Intelligent Transportation Systems Program

A Report to Congress

U.S. Department
of Transportation
**Federal Highway
Administration**

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Intelligent
Transportation
Systems (ITS)

Implementation of the

National Intelligent Transportation Systems Program

A Report to Congress

ITS Joint Program Office
Washington, DC

The Honorable Albert Gore, Jr.
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

The enclosed Report to Congress is submitted in accordance with the requirements of Section 6054 (c) of the Intermodal Surface Transportation Efficiency Act of 1991, Public Law 101-240. It describes the Department's accomplishments over the last 2 years in advancing the National Intelligent Transportation Systems program.

An identical letter has be sent to the Speaker of the House of Representatives.

Sincerely,

Federico Peña

Enclosure

The Honorable Newt Gingrich
Speaker of the House of Representatives
Washington, D.C. 20510

Dear Mr. Speaker:

The enclosed Report to Congress is submitted in accordance with the requirements of Section 6054 (c) of the Intermodal Surface Transportation Efficiency Act of 1991, Public Law 101-240. It describes the Department's accomplishments over the last 2 years in advancing the National Intelligent Transportation Systems program.

An identical letter has be sent to the President of the Senate.

Sincerely,

Federico Peña

Enclosure

Table of Contents

Intelligent Transportation Systems (ITS), formerly Intelligent Vehicle-Highway Systems (IVHS), provide the tools to help us address current surface transportation problems, as well as anticipate and address future demands through an intermodal, strategic approach to transportation. ITS applies current and emerging technologies in such fields as information processing, communications, control, and electronics to surface transportation needs. While ITS technologies alone cannot solve our transportation problems, they can enable us to rethink our approach to solutions, and make current activities more efficient and cost-effective. Effectively integrated and deployed, ITS technologies offer a number of benefits including more efficient use of our infrastructure and energy resources, and significant improvements in safety, mobility, accessibility, and productivity.

Adapted from the *National Intelligent Transportation Systems (ITS) Program Plan*, March 1995.

FOREWORD

This report is being forwarded to Congress pursuant to Section 6054 (c) of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). To obtain the Department of Transportation's (DOT) assessment of progress in the implementation of the National Intelligent Transportation Systems or ITS (formerly IVHS) program, that section of the ISTEA requests the Secretary to:

(a) analyze the possible and actual accomplishments of Intelligent Vehicle-Highway Systems projects in achieving congestion, safety, environmental, and energy conservation goals and objectives of the program;

(b) specify cost-sharing arrangements made, including the scope and nature of Federal investment, in any research, development, or implementation project under the program;

(c) assess nontechnical problems and constraints identified as a result of each such implementation project; and

(d) include, if appropriate, recommendations of the Secretary for legislation or modifications to the IVHS Strategic Plan.

The first Implementation Report, transmitted to Congress in June 1994, described the achievements of DOT in the ITS arena, including early activities predating official establishment of the IVHS program in 1991. This Report conveys program status since the June 1994 Report, including accomplishments, challenges and associated implications for future direction, and assumes an understanding of information presented in that Report.

Editor's Note: This report was written prior to Secretary Federico Peña's January 10, 1996, announcement of a National Goal to implement the Intelligent Transportation Infrastructure (or ITI) nationwide. Prior to this announcement, the ITI was referred to as the "Core Infrastructure" and included seven ITS elements. Since the announcement, the ITI now consists of a total of nine ITS elements, with the inclusion of two new elements—rail-grade crossing and emergency response systems.

READER'S GUIDE TO THIS REPORT

Below is an explanation of where the reader can find material responsive to each element of the ISTEA requirement to report various aspects of the ITS program.

(a) Analyze the possible and actual accomplishments of Intelligent Vehicle-Highway Systems projects in achieving congestion, safety, environmental, and energy conservation goals and objectives of the program.

Part I of this report (under section A, Program Update, and section B, Program Accomplishments) outlines the high level achievements of the Federal ITS program to date; Part II reports on specific progress made within each ITS program area. A companion document to this Report, Assessment of ITS Benefits—Early Results, as well as Exhibit 4 (ITS Benefits Data) and Appendix III (Examples of "Early Deployments") to this Report, list some of the actual measured and observed results of applying ITS technologies and systems toward the goals cited in ISTEA.

Section A3 of Part I outlines formal efforts underway for systematically monitoring and evaluating the achievement of the ISTEA goals set for the program.

(b) Specify cost-sharing arrangements made, including the scope and nature of Federal investment, in any research, development, or implementation project under the program.

Appendix I (ITS Operational Tests, 1991-1995), Appendix II (Research and Development Projects with Cost-Share Arrangements), Appendix V (Early Deployment Studies), and Appendix VI (Priority Corridors) specify the Federal and non-Federal contributions to corresponding programs.

(c) Assess nontechnical problems and constraints identified as a result of each such implementation project.

Discussion of the Department's approach to addressing non-technical barriers and constraints to ITS implementation is discussed in section C of Part I, Where Do We Go From Here?, under "Mainstreaming."

(d) Include, if appropriate, recommendations of the Secretary for legislation or modifications to the IVHS Strategic Plan.

Part I of this Report (in section C, Where do We Go From Here?) offers six main approaches to advancing the goals of this program.

RELATED REPORTS

The following reports provide additional information on the ITS program, and may be obtained from the U.S. DOT Joint Program Office for ITS, or from ITS America.

- *Assessment of ITS Benefits—Early Results (August 1995)*, publication no. FHWA-JPO-96-001 — accompanies this Report to Congress.

- *The United States Department of Transportation Automated Highway System Program Report to Congress (September 1995)*, FHWA and NHTSA Report to Congress pursuant to Senate Report 103-150, Department of Transportation and Related Agencies Appropriations Bill for 1994; delivered in October 1995.

- *Providing Carrier-, Driver-, and Vehicle-Specific Information to the Roadside (May 1995)*, FHWA Report to Congress pursuant to Senate Report 103-310, Department of Transportation and Related Agencies Appropriations Bill for 1995; delivered in September 1995.

- *How the Intelligent Transportation Systems Research and Development Program Integrates with the Operational Test Program (May 1995)*, FHWA Report to Congress pursuant to Senate Report 103-310, Department of Transportation and Related Agencies Appropriations Bill for 1995; delivered in September 1995.

- *National ITS Program Plan: Volumes I and II (and Synopsis), First Edition (March 1995)* — outlines an approach to achieving the goals of the ITS program over the next 20 years, and offers guidance to aid public and private investment decisions; jointly produced by U.S. DOT and ITS America.

- *Department of Transportation's Intelligent Transportation Systems Projects (January 1996)*, publication no. FHWA-JPO-96-003 — a complete listing of all projects, tests, and studies receiving Federal ITS funds, from 1991 to the present; updated annually.

- *U.S. Department of Transportation's Implementation of the National Intelligent Vehicle Highway Systems (IVHS) Program Plan: Report to Congress (June 1994)*, publication, no. FHWA-SA-94-082 — annual report to Congress as required by ISTEA.

- *Nontechnical Constraints and Barriers to Implementation of Intelligent Vehicle Highway Systems: a Report to Congress (June 1994)* — coordinated by the Office of the Secretary of Transportation, in response to an ISTEA requirement.

- *Department of Transportation's IVHS Strategic Plan: Report to Congress (December 1992)*, publication no. FHWA-SA-93-009 — U.S. DOT's first annual report pursuant to the ISTEA requirement.

- *Strategic Plan for Intelligent Vehicle-Highway Systems in the United States (May 1992)*, publication no. IVHS-AMER-92-3 — prepared by ITS America.

I. PROGRAM OVERVIEW AND ACCOMPLISHMENTS

A. Introduction: Program Update, Management and Evaluation

When the Congress wrote ISTEA just over four years ago, it acknowledged that the Nation had reached the goals set for the Interstate era. It called for advancement into the next generation of surface transportation via a new level of research and exploration in pavements, design techniques and **Intelligent Transportation Systems (ITS).**

In response to this charter, DOT launched a multi-faceted ITS Program involving research and limited field trials of promising technologies and systems. Over the last four years, the program has grown, matured, and found unified leadership and direction. We believe the foundation has now been laid for achieving the goals envisioned for ITS in ISTEA through the nationwide deployment of the first generation of Intelligent Transportation Systems in the United States. The program is now entering a new phase marked by two distinct horizons:

Near Term: For the next five years, the Department will focus on facilitating the national deployment of available public infrastructure—systems that many jurisdictions are already beginning to deploy—that can save lives and increase the capacity and efficiency of highway, transit and emergency response systems. Private sector investment and market development is predicated on the existence of a critical mass of such infrastructure.

The national challenge is to ensure consistency in architecture and standards development so that initial deployments form a foundation for the evolution of more sophisticated future systems. Establishment of standards should circumvent haphazard, regionally and modally fragmented, non-interoperable deployment that could seriously deter market development and preclude the achievement of long term ITS benefits.

Recognizing that public benefit comes only through actual commercialization of safety-effective products, the Department will adopt roles that complement the product-based interests of industry while representing the public interest in safety enhancement. We will achieve this goal in the near-term by building government/ industry cooperative relationships; conducting in-service evaluations of near-market crash avoidance products; and encouraging development of technology in our longer term research efforts.

The portion of the ITS program that supports near term deployment includes: architecture, standards, operational tests, model deployment, technology transfer and training efforts.

Long Term: Efforts focused on long term needs involve supporting the research, development and testing of more sophisticated technologies that show promise of deployability over the next 10 to 20 years. This part of the program includes efforts in advancing crash avoidance technology, the next generation of traffic management techniques, and automated highway research. We expect much of the operational test program's focus to shift from testing nearly market-ready technology toward testing technologies and systems derived from the Department's long term research efforts.

In the remainder of Section A, we report on the ITS Program's management, expenditure history, and new efforts in evaluating Program effectiveness and monitoring progress.

In Section B, we outline six major accomplishments that have laid a solid foundation for a program of national deployment. Section C presents a road map for the next phase of the program. The final section articulates a series of emerging issues that we believe will dominate our policy discussion over the next few years.

1. Program Management

The Joint Program Office (JPO) for ITS manages the ITS program for U.S. DOT. The JPO has liaisons with the modal Administrations, and receives policy guidance directly from the ITS Management Council chaired by the Deputy Secretary of Transportation.

The JPO recently coordinated the development of a set of "road maps" that mark milestones and critical paths for achieving key program objectives. Representatives of the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA), and the Federal Transit Administration (FTA) worked closely with JPO to develop these maps which now serve as the bases for budgeting and program evaluation. Exhibit 1 on page 3 breaks down the JPO's management structure; Exhibit 2 outlines JPO program goals.

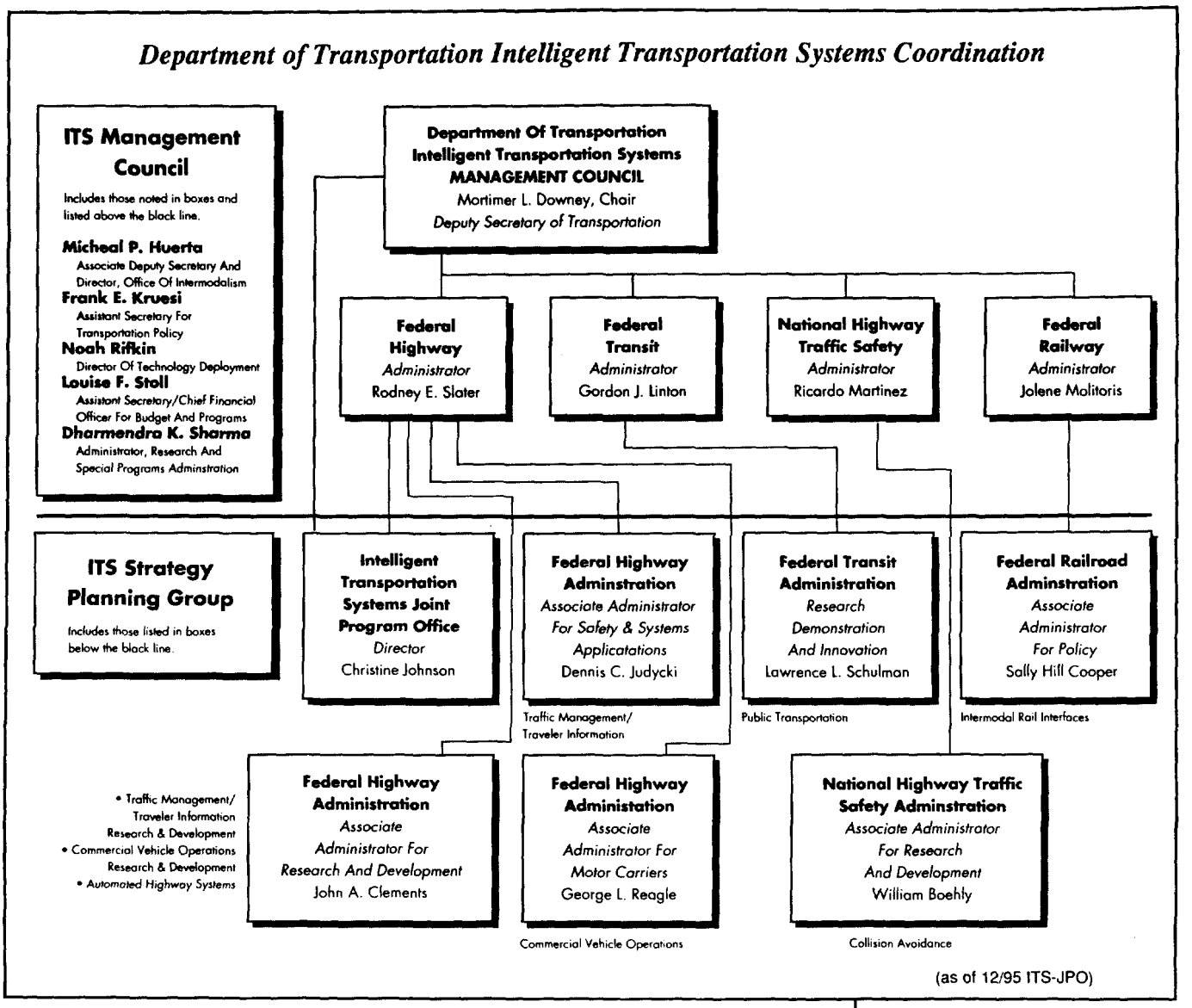

Exhibit 1. Joint Program Office Management

JPO is housed within FHWA and receives policy guidance from the ITS Management Council, chaired by Deputy Secretary of Transportation, Mortimer L. Downey.

Exhibit 2. ITS Program Goals

1. Widespread implementation of intelligent vehicle-highway systems to enhance the capacity, efficiency, and safety of the Federal-aid highway system, and to serve as an alternative to additional capacity of the Federal-aid highway system.

2. Enhance, through more efficient use of the Federal-aid highway system, the efforts of several states to attain air quality goals established pursuant to the Clean Air Act.

3. Enhance safe and efficient operation of the Nation's highway systems, particularly system aspects that will increase safety. Identify system aspects that may degrade safety.

4. Develop and promote an intelligent vehicle-highway system and an intelligent vehicle-highway systems industry in the United States.

5. Reduce societal, economic, and environmental costs associated with traffic congestion.

6. Enhance U.S. industrial and economic competitiveness and productivity.

7. Develop a technology base for intelligent vehicle-highway systems and establish the capability to perform demonstration experiments, using existing national laboratory capabilities where appropriate.

8. Facilitate the transfer of transportation technology from national laboratories to the private sector.

JPO works toward the achievement of eight program goals, as delineated in ISTEA.

The program is advised by the Intelligent Transportation Society of America (ITS America), which was established in 1991 as a Federal utilized advisory committee. ITS America membership hails from all sectors of the surface transportation community: state and local governments, motor vehicle manufacturers, commercial vehicle operators, railroads, telecommunications and commuter technology companies, universities and other research organizations, consulting firms, and public interest groups.

It sponsors workshops, conferences, and symposiums to convene researchers, producers, and ITS service users; it provides a forum for the exchange of ideas on what works, what is useful, and what is not, and to address remaining unfulfilled needs. ITS America has produced a number of reports, including a National Strategic Plan. It has partnered with DOT in developing the Program Plan and gaining consensus on a National Architecture.

2. Program Expenditures

ISTEA authorized a total of $659 million over 6 years to achieve 8 key goals, as listed in Exhibit 2. As of Fiscal Year 1995, $433.0 million of ISTEA funds have been authorized for expenditure in the program. This amount was supplemented by $354.3 million ($394.6 million appropriated, less $40.3 million rescinded in FY 1995) in funds from the General Operating Expense budget, for total funding of $787.3 million through Fiscal Year 1995. We estimated that by the end of 1995, all but about $11 million would have been obligated. Exhibit 3 breaks down overall ITS fund obligations.

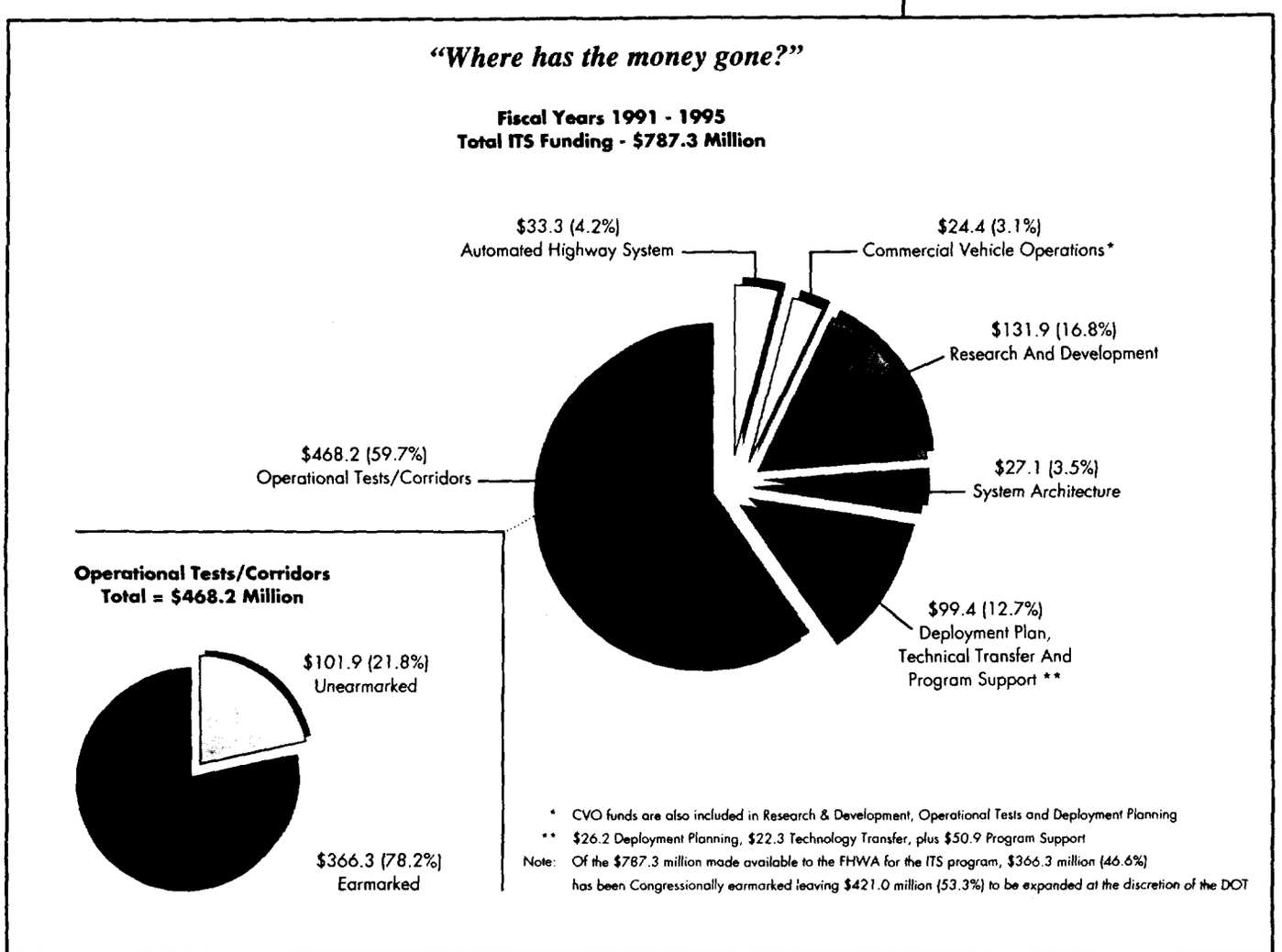

Exhibit 3. "Where Has the Money Gone?"

ITS spending goes toward Operational Tests/Priority Corridors, the Automated Highway System (AHS), Commercial Vehicle Operations (CVO), Research and Development, System Architecture, and Deployment Planning, Technical Transfer and Program Support.

About 60 percent of the $776 million total obligated amount was applied to field testing and demonstration projects, as part of either operational tests or the ISTEA Priority Corridors[1] program; 78 percent of that amount (operational tests and corridor projects) was Congressionally directed. Appendix I is a comprehensive breakdown of funding sources (i.e., Federal and other) for the operational test projects only. In many cases, Federal funds have leveraged a very high proportion of local or private funds (see Appendix I).

About 21 percent of ITS funding went to research, including the Automated Highway System (AHS) program. Many ITS research and development (R&D) projects also have had shared-cost arrangements, as presented in Appendix II.

About 16 percent of ITS funding has supported development of a foundation for national deployment, in response to the ISTEA mandate to foster: widespread implementation of intelligent vehicle-highway systems to enhance the capacity, efficiency, and safety of the Federal-aid highway system and to serve as an alternative to additional capacity of the Federal-aid highway system.

Efforts in this area have included development of a national ITS systems architecture, standards development, funding of early deployment plans, assessment of institutional issues and early training efforts.

3. Program Monitoring and Evaluation

As the ITS program has evolved from a "start-up" to a mature R&D program, the Department has begun to evaluate program results against national goals, and to monitor the progress of national deployment.

Early results — An early evaluation of benefits (*Assessment of ITS Benefits—Early Results*, August 1995) accompanies this Report. The benefits assessment indicates that early ITS technologies show real promise of improving the efficiency of our current transportation system at the local level. For example, effective traffic signal synchronization has reduced delays and stops by 15 percent in some projects, and decreased travel times by up to 7 percent in others. In one area, incident management programs saved 300,000 hours of incident-related delay per year, increasing average speeds by 13 percent and vehicle miles traveled by 5 percent. One transit authority saw on-time performance improve by up to 23 percent using Automatic Vehicle Location (AVL) technology. One transit system reported a 12 percent revenue increase after implementing automatic fare collection; another jurisdiction estimated annual savings of up to $990,000 by using a single payments fare collection system and eliminating separate transfers. Exhibit 4 summarizes some of these early benefits.

[1] The ISTEA Priority Corridors are: the I-95 Coalition (Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia); the Midwest Corridor (Gary, Indiana, to Chicago to Milwaukee); Houston; and Southern California.

Exhibit 4. ITS Benefits Data

FUNCTIONAL AREA	SOURCE
Advanced Traffic Management Systems (ATMS)/ Advanced Traveler Information Systems (ATIS)	
■ FAST-TRAC, a project consisting of computer-controlled adaptive signal control, automated traffic monitoring and other ITS technologies, has increased vehicle speeds by 19 percent during peak hours in the Oakland County, Michigan, area.	ITS America
■ The Minnesota Department of Transportation, using a real-time traffic adaptive freeway control system that meters traffic onto the freeway, has decreased its accident rate by 25 percent, improved response times to incidents by 20 minutes, and increased average speeds by 35 percent (34 to 46 miles per hour).	
■ After installation of computerized traffic signals, Abilene, Texas, reduced carbon monoxide and hydrocarbon emissions by 10 percent.	
Commercial Vehicle Operations (CVO)	
■ Portable computer applications for mobile data communications enhanced field service operations and saved a small private carrier more than $10,000 per month in total costs.	American Trucking Associations
■ ADVANTAGE I-75, which allows transponder-equipped, properly documented trucks to travel the I-75 corridor with minimal stoppage, has been implemented. Projected benefits include:	Report, *Assessment of ITS Benefits - Early Results* (August 1995)
▼ reduce overweight loads by 5 percent with estimated saving of up to $5.6 million annually,	
▼ cut weigh station operating costs by up to $160,000 annually, with electronic credentials checking and safety inspections saving another $4.5 to $9.3 million annually.	
■ The COVE study estimates a benefit/cost ratio to the government of 7.2 for electronic clearance, 7.9 for one-stop/no-stop shopping, and 5.4 for automated roadside clearance.	

Exhibit 4 continued on next page

Exhibit 4. ITS Benefits Data (continued)

FUNCTIONAL AREA	SOURCE
Advanced Public Transportation Systems (APTS)	
■ Baltimore, Maryland, improved on-time performance by 23 percent after installing AVL technology on 50 buses.	ITS America
■ Kansas City has saved $400,000 in operating expenses and cut the response time under emergencies from four minutes to one minute by installing AVL technology on 200 buses.	
■ Winston-Salem Transit Authority reports that its AVL computer-aided dispatching (CAD) system has decreased paratransit passenger waiting time by 50 percent.	
■ Based on operational tests of smart card systems with the Torrance, Gardena and Los Angeles Transit Departments, the Ventura County FARETRANS project estimates savings of up to $9.5 million per year from smart card deployment.	
Advanced Vehicle Control and Safety Systems (AVCSS)	
■ Blind-spot detectors are now commercially available. The Forewarn system has been applied to school buses since 1993. Although quantitative benefits are not yet available, pilot programs in states considering deployment have performed exceptionally well.	Report, *Assessment of ITS Benefits -Early Results* (June 1995)
Electronic Toll and Transportation Management	
■ The Oklahoma Turnpike Authority estimates that the annual cost to operate an automated toll lane is $15,800 versus $176,000 for an attended lane.	Oklahoma Turnpike Commission
■ The New York State Thruway estimates that full implementation of its E-ZPass electronic toll program will save approximately $5 million per year in toll collection costs.	New York State Thruway Authority

ITS implementation is already showing both real and projected results in Advanced Traffic Management Systems/Advanced Traveler Information Systems; Commercial Vehicle Operations; Advanced Public Transportation Systems; Advanced Vehicle Control and Safety Systems; and Electronic Toll and Transportation Management.

Evaluating Operational Tests — As the operational test program reaches fruition, the Department has retained a national consultant to ensure comparability and thoroughness in project evaluation. These evaluations will measure benefits such as productivity and safety, and address other key research questions such as the performance parameters of the technology. Feedback from these efforts will allow the program to make course corrections as needed.

Measuring Deployment — Key to achieving widespread ITS deployment will be the availability of certain *core ITS infrastructure*[2]. We have instituted a program to regularly measure progress in national deployment [See *ITS America Fact Sheets* #2, 5, 6, 10 and 11 of Appendix III for highlights of our initial efforts]. We are currently building a database of existing and emerging ITS infrastructure, and expect to include deployment progress data in our annual report to Congress.

B. Program Accomplishments

By almost any standard, the ITS program has achieved results beyond the expectations of the professional community (and, perhaps, even beyond those of Congress). Some of these achievements are precursors to more dramatic, future innovations (for instance, real-time traveler information and fleet vehicle management services, lane-keeping sensors, crash warnings, and adaptive traffic signal control); others are today's building blocks that form the foundation for establishing the first internationally recognized standard for interchangeable transit vehicle components and achieving the long term ITS vision.

To date, we have:

1. Defined the ITS Vision and Charted a Course to Achieve It —

In 1992, the Intelligent Transportation Society of America (ITS America) and the Department published complementary ITS visions and strategic plans. These were followed by an unprecedented jointly developed **National ITS Program Plan.** This plan, published in March, 1995, charts a course for both the public and private sectors in achieving this shared vision. Building upon this foundation, JPO coordinated the development of a set of "road maps" that mark milestones and critical paths for achieving key program objectives. Program offices within FHWA, NHTSA, and FTA worked closely with JPO to develop these maps which now serve as the basis for ITS budgeting and program evaluation.

2. Launched Aggressive Long term Research Program —

The Department has established long term research programs that, if supported consistently, could ensure that the United States remains an industrial and technological leader in key emerging ITS technology areas. Primary programs of long term research include:

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[2] The term "core ITS infrastructure," or "core infrastructure," refers to one of two core infrastructures: Commercial Vehicle Operations (CVO) and Travel Management. When used in this report, the term refers to only one type of core infrastructure, as determined by context.

- **Advanced Public Transportation Systems (APTS)** - FTA has established a R&D program designed to make public transportation travel more user-friendly and more efficient for both the traveling public and the transportation provider. Activities focus on assessments and information dissemination to both the public and to public transportation providers for:
  (a) real-time, interactive, traveler information systems;
  (b) fare payment systems research and case studies in the cities of Boston, Washington, New York, Chicago, Seattle and San Francisco; and
  (c) fleet management systems research and development.

  Additional activities include the development of a National Transit Geographic Information System (GIS) for the further development of ITS technologies in transit and establishing databases for all public bus routes, and conducting workshops to further the awareness and exchange of information of GIS development for transit.

- **Advanced Vehicle Control and Safety Systems (AVCSS)** - NHTSA has undertaken a major research effort to facilitate the development and implementation of cost-effective technologies for improving crash avoidance. Also, the agency has taken steps to ensure that the introduction of driver information systems and other vehicle-based electronic innovations do not compromise safe driving. These pursuits are addressed by five "thrusts:"
  1) development of research tools and knowledge base,
  2) problem definition/analysis,
  3) demonstration of concept/optimal performance specification,
  4) encouragement of commercial development, and
  5) system evaluation activities.

- **Advanced Traffic Control** - FHWA has a long history of providing advanced concepts, technologies, and technical assistance to states and localities to improve efficiency in traffic management. Until recently, however, even the most advanced tools available (e.g., centrally coordinated signal systems) have still placed the burden of system optimization and control on the system's human caretakers. FHWA is working toward a vision of fully integrated surveillance and control systems that allow management across the entire freeway/arterial network. Current programs aim at developing algorithms that can adapt signals and control strategies automatically to adjust to changing loads on the network (giving "green time" where it's needed), and developing software tools that actively aid network operators among different jurisdictions in cooperatively managing incidents and controlling the system. R&D on advanced sensors may provide system managers with better ways of receiving data on network performance that will feed the advanced analysis and control software under development.

- **Automated Highway System (AHS)** - AHS is a key component of next-generation U.S. surface transportation. The goal is to enhance quality of life through the significant improvements in safety, mobility, enjoyment, and environmental impact that vehicle automation can achieve. The AHS will provide automatic transit, both commercial and private vehicle operation in special lanes, and facilitate more productive intermodal movement of people and goods.

The National Automated Highway System Consortium (NAHSC) will specify, develop and—as fulfillment of the ISTEA requirement—demonstrate the feasibility of AHS. These efforts will yield system specifications for an evolutionary AHS deployment model that can be adapted to regional and local transportation needs. The Consortium will seek opportunities for early introduction of vehicle and highway automation technologies that benefit all surface transportation users. NAHSC will incorporate public and private stakeholder views to ensure that an AHS is economically, technically and socially viable.

3. Tested the Viability of Numerous Technologies and Applications —

The Department has launched 77 operational tests that will provide considerable insight into the ability of numerous technologies to reduce congestion, decrease emergency response time, increase transit system productivity and passenger convenience, increase safety and personal security, and/or reduce the environmental impact of transportation (see Exhibit 5 for a map of operational test locations).

Exhibit 5a. FHWA/FTA/NHTSA ITS Operational Tests

FHWA, FTA and NHTSA have launched 24 operational tests, including an Iowa-Minnesota-Wisconsin multi-state effort, that focus primarily on ITS technology.

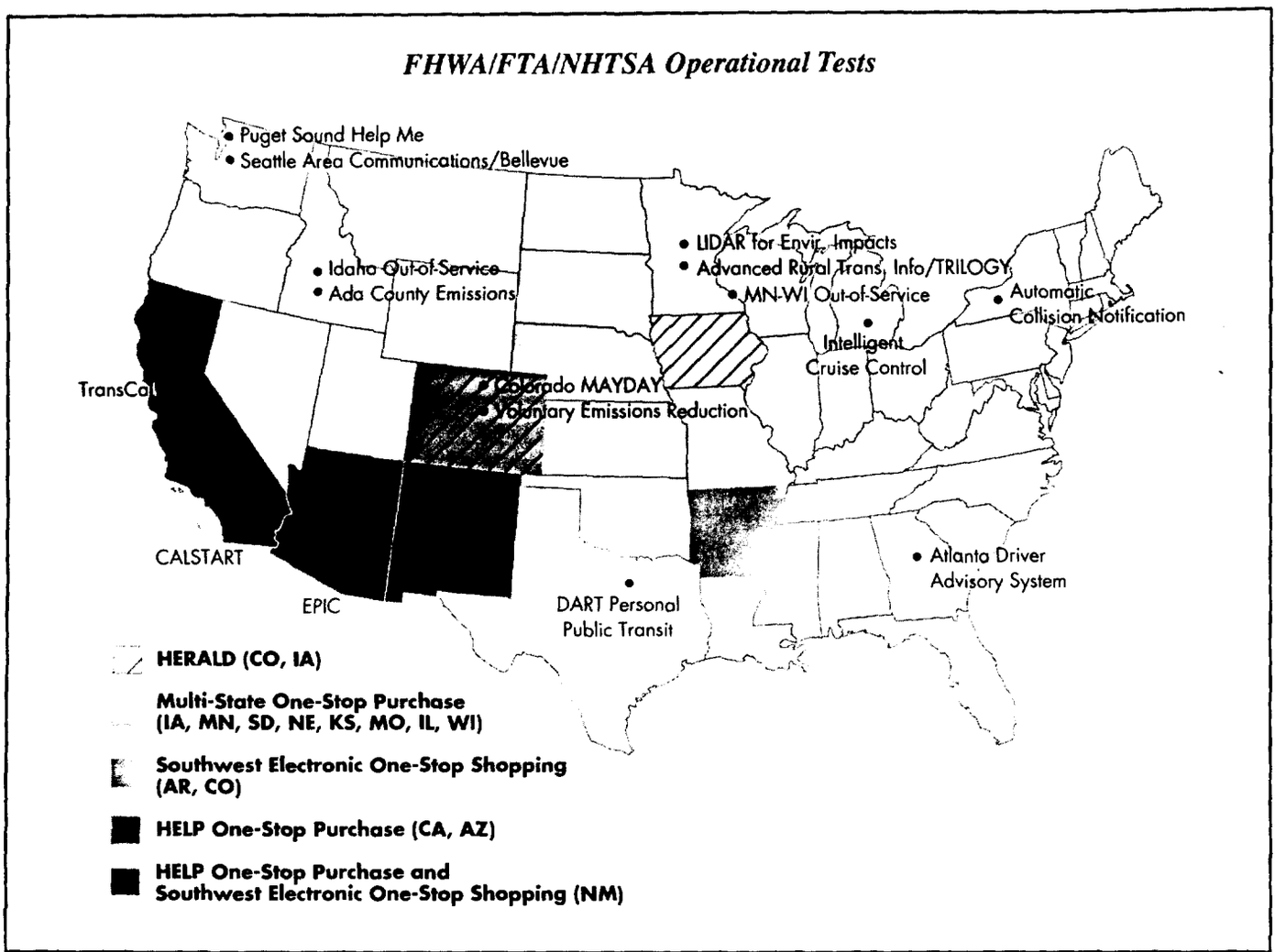

Exhibit 5b. FHWA/FTA/NHTSA Operational Tests

FHWA, FTA and NHTSA have launched 16 other operational tests, including several multi-state efforts.

Some preliminary test results are recorded in the accompanying volume, *Assessment of ITS Benefits—Early Results*; the next two years will yield more substantial reporting as formal evaluations of the tests are documented.

Perhaps the greatest measure of success of the operational test program is the demand to extend these "tests" into the regular operations of the various agencies. For example, Oakland County, Michigan, is permanently integrating its traffic management and traveler information systems as a result of its FAST-TRAC project. Moreover, the move by several agencies to begin investing their own funds to implement ITS services, and the fact that companies are beginning to bring products and services to market, is even stronger evidence of the confidence placed in these "early deployment" products. Numerous examples include the extensive use of AVL systems for fleet management and traveler information services currently being activated throughout the United States; the in-vehicle navigation system available on some new GM and Ford models; the emergency rescue system for some Ford models; the "311" travel information service in the Greater Cincinnati area; and the San Antonio traffic management center. See Appendix III for more examples of completed and ongoing operational tests.

4. Launched National Architecture and Standards-setting Programs —

The Department and ITS America have undertaken the development of a consensus architecture to guide—not mandate—consistency among local investors, purchasers, and producers to reduce the risk of incompatibility among the numerous systems and components to be manufactured and purchased in the ITS industry. Phase I, which involved a competition among viable architectural concepts, is complete. Phase II, scheduled for completion in late 1996, involves developing consensus around a single architecture and deployment strategy that incorporates the best features of the competing concepts in Phase I. The Architecture Development Program is also yielding a series of standards requirements that has launched a standards development process.

Standard-setting activity results have been demonstrated in the official acceptance of a recommended practice for interfacing interchangeable transit vehicle components. This action is expected to minimize the cost of electronic transit components and systems while providing for the expansion and technology advancement with minimum impact on in-place assemblies. This practice is the first ITS recognized standard and is being used for procurements in the United States, Canada and Europe.

5. Developed Local Plans for the Deployment of Commercial Vehicle and Travel Management ITS Infrastructure —

The Department has supported state and local agencies in developing plans for early deployment of ITS technology for travel management and commercial vehicle safety regulation. As CVO are frequently multi-jurisdictional, we have encouraged the development of multi-state groups to begin re-engineering their regulatory functions and developing common approaches for deploying ITS technology. The objective is to streamline and enhance those operations for both carriers and states. Exhibit 6 illustrates those state groupings.